AMSAT News Service Weekly Bulletins
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AMSAT NEWS SERVICE
ANS-342

The AMSAT News Service bulletins are a free, weekly news and information service of AMSAT North America, The Radio Amateur Satellite Corporation. ANS publishes news related to Amateur Radio in Space including reports on the activities of a worldwide group of Amateur Radio operators who share an active interest in designing, building, launching and communicating through analog and digital Amateur Radio satellites.

The news feed on http://www.amsat.org publishes news of Amateur Radio in Space as soon as our volunteers can post it.

Please send any amateur satellite news or reports to:
ans-editor at amsat.org.

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SB SAT @ AMSAT $ANS-342.01
ANS-342 AMSAT News Service Weekly Bulletins

AMSAT News Service Bulletin 342.01
>From AMSAT HQ SILVER SPRING, MD.
DATE December 8, 2013
To All RADIO AMATEURS
BID: $ANS-342.01

WD9EWK releases videos of working AO-73

Patrick Stoddard WD9EWK has been working the new AO-73 satellite from his back yard. Most of the time, he has been using his normal portable all-mode satellite station - two Yaesu FT-817NDs, Elk handheld 2m/70cm log periodic antenna. On November 30 he replaced one of the FT-817NDs with a Kenwood TH-F6A - using its all-mode receiver to copy the downlink. December 1 he used an Icom IC-R20 receiver for the downlink. He's used these radios in the past on other satellites, and for some hamfest demonstrations on VO-52 Patrick had used the FT-817ND/TH-F6A combination. He has made a series of videos (satellite audio combined with slideshows) from several AO-73 passes he has worked.

They are available at:

http://www.youtube.com/va7ewk

One of the AO-73 videos contains audio from two passes, and is about twice as long as the others which have audio from a single pass.

After working these passes, he is convinced that this new satellite performs as well as VO-52, for both its uplink and downlink. This is a very good thing! AO-73 hears very well, as long as you're careful to match the polarization of the satellite's antennas. The downlink is strong enough to allow the use any of these radios as the receiver on higher passes. For lower passes, he will probably use his second FT-817ND for the downlink receiver. It is good to know that, at least on the higher passes, there are lots of options for a downlink receiver. On the same higher passes, he learned that he can cut the power down from 5W to 1W and even 500mW. High power is not necessary to be heard through the transponder.

Patrick's next project with AO-73 will be using a FUNcube Dongle Pro+ as the downlink receiver, for both the transponder and telemetry, while working the transponder with an FT-817ND as his transmit radio. He reinstalled HDSDR and its ExtIO DLL for the Pro+ dongle on his 64-bit Windows 7 laptop, and it is working well. He will be installing the FUNcube-1 dashboard software. Patrick has an old netbook running Linux, and is curious to see how the dongle works with that operating system. His hope is to be able to use the dongle and a laptop as the downlink receiver, without being wiped out by the 5W signals from an FT-817ND.

If all is successful, he believs he will have a new combination for his all-mode satellite station that he can use for upcoming demonstrations. Using the dongle and dashboard software during daytime AO-73 passes at hamfests would be something different, and a great thing to show off to the hamfest crowds.

Patrick thanks all who worked on getting this satellite built and launched. "Even with the transponder on only for the nighttime passes, it has been fun to be on a new satellite so soon after its launch."

[ANS thanks Patrick WD9EWK/VA7EWK the above information]

AO-73 added to LoTW list of recognized satellites

New version (Ver. 2.7) of configuration file config.xml now available on Logbook server

Changed in config.xml version 2.7: Added entry for AO-73 (FunCube) to list of recognized satellites

Please log into your LoTW account, click on YOUR ACCOUNT - Your Certificates - download latest configuration file.

This will update the satellite list and accept AO-73.

You should be able to sign the QSOs with TQSL to make a TQ8 file with those QSOs.

[ANS thanks Kathy Allison KA1RWY, ARRL LoTW Specialist for the above

information]

South Africa ZACube-1 Tshepisosat Telemetry Requested

South Africa's ZACube-1 F'SATI Satellite team at the Cape Peninsula University of Technology is looking for your support to collect telemetry. They request radio amateurs to listen for the UHF beacon on 437.345 MHz. It will be a great help if they can log the raw data from the TNC and send it to Leon at ldutsteenkamp at gmail dot com.

ZACube-1 will be going through a commissioning process for the next two weeks to make sure everything works fine. Then the satellite will be commanded into a spin, where after the HF antenna will be rolled out. Only then will the team turn on the HF beacon on 14.099 MHz.

So far the team has tested the downlink and uplink, checked system status, uploaded command scripts with nominal Results. Battery voltage varies between 7.6 and 8.2 V, and on-board temperature between 12 and about 26 degrees C. The telemetry also shows that the ISIS antennas deployed on the first try.

The AMSAT keplerian elements bulletin released this week noted that ZACube-1 is currently using Cat # 39417 KEPs (the same as AO-73).

[ANS thanks SARL NEWS Sunday 1 December 2013 for the above information]

New Award from The Star Comm Group

The Star Comm Group has a new satellite award called Got Grids? that will be effective 1 Jan 2014. The award can be seen along with the rules at
  http://www.starcommgroup.org/gotgrids.html

The rules for the 5in EM55 award have been changed to make it a little easier.
  http://www.starcommgroup.org/5in55.html
This award is open to the world with the new rules. Example you can work 5 stations that have the award anywhere, without working anyone in EM55 or any combination, say 2 stations in em55 and 3 stations that have the award from any other state or country.

A 3rd award is in the planning stages , GRID MASTERS rules and design to come soon.
These awards are free. Donations to Amsat are welcomed. Please note on your check STAR Comm Group Award
We hope to increase activity on the birds.
Comments or questions contact
 wa4hfn at comcast dot net Damon
 wa4nvmat comcast dot net   Rick

[ANS thanks Damon WA4HFN for the above information]

Listening Help Requested for Trailblazer and DragonSat

Have you heard Trailblazer or DragonSat?
Jin KB3UKS and Craig KE5VSH launched two CubeSats a week or so ago. The first is Trailblazer and the second is DragonSat. Trailblazer is from the Configurable Space Research at the University of New Mexico (KE5VSH) and DragonSat is Drexel University. Our problem is that we haven't heard from our satellites yet. There could be a variety of different reasons. First, the satellite didn't survive delivery. Second, our antennas didn't deploy or third, we have poor ground stations. As you can imagine, I am hoping for the third. I pasted the TLE which is openly available on space-track and celestetrack, below. It is very close (I believe) to our birds. If you have a chance, could you please keep your ears open in case you might hear us.
Please email any packets for Trailblazer to myself here at craig.kief at cosmiac dot org and for DragonSat to Jin Kang at kang at usna dot edu.

Thanks again most sincerely,
Craig

Trailblazer 437.425MHz, AX.25, 9,600 (there is another satellite with the same tx freq as mine there as well).
On my packets, if you see C0 00 A8 84…. You will provide me with a wonderful gift. I beacon every 50 seconds

DragonSat 145.870MHz, AX.25, 9,600. Beacons every 30 seconds.

Trailblazer Maybe
1 39382U 13064C 13325.87382098 .00041511 00000-0 18318-2 0 39
2 39382 40.5103 239.5017 0004316 318.4599 41.5592 15.20995117 275

[ANS thanks Craig KE5VSH for the above information]

CAPE-2 Tracking Information Updated

Here is a link to all information the CAPE Team currently has for tracking the Satellite (Updated 12/02/2013). A program will be released in the next few days to decode data.

http://ulcape.org/cape-2-tracking-update-12022013/

Frequency: 145.825 (varies due to Doppler shift)
Modulation: FM/CW
Beacon Interval: Varies Based on Modes (alternating ax25and CW)

Green Mode Interval: 2 Minutes
Orange Mode Interval 4 Minutes
Red Mode Interval 6 Minutes

Current TLEs
1 39380U 13064A 13330.07541444 .00010598 00000-0 47292-3 0 199
2 39380 40.5199 215.0588 0005267 335.2591 24.7901 15.21214750 922
* TLE is unconfirmed as official TLE for CAPE-2, but has yielded our best results thus far.

On behalf of the CAPE-2 Team, we would really appreciate any data

you can relay to us on the satellite.

[ANS thanks Rizwan Merchant KF5BNL for the above information]

Successful Launch of NROL-39 CubeSats

At 07:14:30 UT on Friday, December 6 a United Launch Alliance Atlas 5 rocket lifted off from Space Launch Complex 3-East (SLC-3E) at Vandenberg Air Force Base on California's Central Coast.

In addition to a classified satellite for the US spy satellite agency the National Reconnaissance Office it carried 12 CubeSats four of which have amateur radio payloads.

Justin Foley KI6EPH has made available this TLE for the CubeSats:

1 99991U 00000   13340.43204282 0.00000000 00000-0 00000-0 0 0006
2 99991 120.5031 227.3464 0297856 339.9554 93.2232 14.64196995000009

Further information on the CubeSats on the Atlas V GEMSat Launch 2013 can be found at http://tinyurl.com/ANS342-NROL-39-Cubesats

Space Flight Now story
http://spaceflightnow.com/atlas/av042/131206launch/

[ANS thanks AMSAT-UK for the above information]

NASA Enhances 'Space Station Live' and Launches New Weekly Web Series

Starting in December, NASA will show the public the International Space Station in new ways that will highlight all the scientific research, cutting-edge technology testing and even the wonder of living and working in space.
NASA is enhancing its daily NASA Television "Space Station Live" program and beginning a new weekly web series called "Space to Ground."

"Space Station Live" will continue to air weekdays at 11 a.m. EST and now will be in a 30-minute format beginning Dec 2. It will feature live views from the International Space Station, updates on the crew's daily activities, enhanced content and interviews on space station science and features on how that science benefits life on Earth.

The "Space to Ground" web series will be available every Friday beginning Dec. 6. This series will be a short wrap-up of the week's activities aboard the space station that will showcase the diversity of activities taking place aboard the world's only orbiting laboratory. This video also will be posted to the agency's social media accounts and can be shared and downloaded by the public.
The International Space Station remains the springboard to our next great leap in exploration. The space station is a convergence of science, technology and human innovation that is helping us learn what it means to be a spacefaring people by demonstrating new technologies and making research breakthroughs not possible on Earth.

To view "Space to Ground" beginning Dec. 6, visit:
http://go.nasa.gov/spacetoground

For NASA TV streaming video, downlink and scheduling information, visit:
http://www.nasa.gov/nasatv

For media b-roll and resources on the International Space Station, visit:
http://www.nasa.gov/stationnews

For more information about the International Space Station, visit:
http://www.nasa.gov/station

[ANS thanks Joshua Buck, Josh Byerly and NASA for the above information]

NASA Education and Virginia Space Grant Opportunities Available

+ 2014-15 Virginia Space Grant Consortium Undergraduate STEM Research Scholarship

The Virginia Space Grant Consortium is offering undergraduate research scholarships of up to $8,500 to encourage talented individuals to conduct research in science, technology, engineering or mathematics, or STEM, fields.

Applicants must participate in an active faculty-mentored research experience that aligns with the aerospace sector and meets NASA's mission. Student stipends and research support totaling $4,000 during the academic year and $4,500 during a summer semester are available.

These one-year awards are nonrenewable and based on student academic merit, quality of the research proposal and alignment of research with the goals of NASA and the aerospace sector. Underrepresented minority students, female students and students with disabilities are encouraged to apply. Applicants must be U.S. citizens and enrolled at one of the five Virginia Space Grant member universities: The College of William and Mary, Hampton University, Old Dominion University, University of Virginia and Virginia Tech.

The deadline for submitting applications is Feb.10, 2014.

For more information, visit http://vsgc.odu.edu/sf/undergrad/.

+ Virginia Space Grant Consortium Graduate STEM Research Fellowship

The Virginia Space Grant Consortium's Graduate STEM Research Fellowship Program provides fellowships of $5,000 in add-on support to graduate students to supplement and enhance basic research support. The objective of this science, technology, engineering and mathematics, or STEM, research fellowship opportunity is to encourage talented individuals to pursue careers in STEM industries that support NASA's mission.

Participants in the Graduate STEM Research Fellowship Program must take part in an active faculty-mentored research experience that aligns with the aerospace sector and meets NASA's mission. Awards are made annually and are renewable for one year for students making satisfactory academic and research progress.

This is a competitive fellowship program, and awards are based on merit recognizing high academic achievement and promise. Underrepresented minority students, female students and students with disabilities are encouraged to apply. Applicants must be U.S. citizens and enrolled at one of the five Virginia Space Grant member universities: The College of William and Mary, Hampton University, Old Dominion University, University of Virginia and Virginia Tech.

The deadline for submitting applications is Feb.10, 2014.

For more information about this opportunity and to apply online, visit http://vsgc.odu.edu/sf/gradfellow/.

+ 2014-15 Virginia Space Grant Consortium STEM Bridge Scholarship

The Virginia Space Grant Consortium, or VSGC, is offering renewable scholarships to sophomore undergraduate students studying science, technology, engineering or mathematics, or STEM. The STEM Bridge Scholarships are $1,000 and are available to students who are U.S. citizens from any federally recognized minority group enrolled fulltime at one of the five VSGC member universities: The College of William and Mary, Hampton University, Old Dominion University, University of Virginia and Virginia Tech.

The STEM Bridge Program bridges students to future opportunities by mentoring and guiding them to future VSGC scholarships and NASA-related paid internships. The program encourages students to explore how their majors can apply to NASA’s Mission.

This is a competitive program, and awards are based on student academic merit, quality of interest essay as well as letters of recommendation from current college faculty who can attest to students' interest in STEM areas.

The deadline for submitting applications is March 17, 2014.

For more information, visit http://vsgc.odu.edu/sf/Bridge/.

+ 2014-15 Virginia Space Grant Consortium Community College STEM Scholarship

The Virginia Space Grant Consortium, or VSGC, encourages academically talented individuals to pursue studies and careers in science, technology, engineering and mathematics, or STEM. The VSGC is offering a limited number of scholarship opportunities to students majoring in STEM fields at any campus in the Virginia Community College System, or VCCS.

These $2,000 scholarships are competitive awards based on academic merit for students demonstrating an interest in NASA's missions and STEM-related careers. The VSGC strongly supports students in technical career pathways who are preparing to transfer to institutions of higher learning while developing the essential skills for a competitive global workforce.

Underrepresented minority students, female students and students with disabilities are encouraged to apply. Applicants must be U.S. citizens and enrolled in the VCCS.

The deadline for submitting applications is March 17, 2014.

For more information, visit http://vsgc.odu.edu/sf/ccstem/.

Please email any questions about these four opportunities to
rkashiri at odu dot edu.

[ANS thanks NASA Education for the above information]

See What You Are Missing if You Don't Receive Your Own AMSAT Journal

Membership includes the AMSAT Journal and discounts on purchases
made through the AMSAT store. You can see representative articles
available only to our members here.

To download your own copy of the sample AMSAT Journal articles
   ... go to http://www.amsat.org -->
   ... then Mouse over the 'AMSAT' Tab in the top row
   ... then select 'Join AMSAT' which brings you to:
          http://ww2.amsat.org/?page_id=1095

When you click on the blue highlighted link 'here' you will land
on a page to choose from two sample articles in PDF format.

These are brand new just released articles in the November/December
2013 issue of the AMSAT Journal. Other sample issues plan to be
made available from upcoming issues of The AMSAT Journal.

Follow the Join AMSAT links to sign up to receive your very own
copy of the AMSAT Journal - this is an exclusive membership benefit
in AMSAT.

While you navigate around http://www.amsat.org take a look at the
expanding content and updated pages. Hint: Click on the graphic
across the top of each page to jump back 'home'.

[ANS thanks the AMSAT Journal Team and Alan Biddle, WA4SCA for the
 above information]

ARISS News

+ A Successful contact was made between Salisbury Middle Schools
Salisbury, New Brunswick, Canada and Astronaut Michael S. Hopkins
KF5LJG using callsign NA1SS. The contact began 2013-11-20 17 UTC and
lasted about nine and a half minutes. Contact was telebridged via
W6SRJ. ARISS Mentor was VE1WPH.

For the past several months, students and staff of Salisbury Middle
School have been working hard in anticipation of this wonderful
opportunity. Most obvious was how the students continued to learn
and their excitement as they came together toward this common goal,
of which they are all proud. In anticipation of the actual ARISS
contact, the students asked that it be proclaimed as “A Day to Space
Out”. Activities began with the official launch showcasing a video
created by the students providing information regarding the event.
Also created by the students were weekly special segments featuring
the School's PodCast News Show which include short space related
videos, ISS News and current expedition Astronaut biographies. The
students also enjoyed informative presentations from the Astronomical
Society of New Brunswick and the Science East Planetarium . The

Moncton Area Amateur Radio Club will be transmitted from SMS on November 15th, in conjunction with space related “Theme Day”. One creative student submitted an event logo which will be printed on tee-shirts and worn by students as they ask their questions.

+ A Successful contact was made between Primary and Junior High Schools Complex, Stobierna, Poland and Astronaut Koichi Wakata KC5ZTA using callsign NA1SS. The contact began 2013-11-27 09:26 UTC and lasted about nine and a half minutes. Contact was telebridged via VK5ZAI. ARISS Mentors were SP3QFE and IN3GHZ.

School Complex in Stobierna is composed of two main school levels: primary school and junior high school. The primary school attendants' are six-year-old to twelve-year-old students, whereas, the junior high school's students are thirteen to sixteen years old. The second type of school puts more emphasis on Science (including Physics and Mathematics). The students of these schools are interested in astronomical observations, thus they are eager to take part in special classes concerning such issues. Schools organized special classes associated with the astronomical observations of the sky. We organised a series of educational trips to places from which students observed the sky: in the stars, planets and satellites. These activities were integrated into daily school activities in the field of physics and astronomy. Because many schools participated in the project, we organized interschool competitions. Moreover school organized a series of competitions related to astronautics!
For the youngest students there was a drawing contest, a contest for older students, multimedia presentations related to space flight and the history of the ISS.

+ A Successful contact was made between Primary and Junior High Schools Complex, Brzeznica, Poland and Astronaut Michael S. Hopkins KF5LJG using callsign NA1SS. The contact began 2013-12-03 08 UTC and lasted about nine and a half minutes. Contact was telebridged via K6DUE. ARISS Mentors were SP3QFE and IN3GHZ.

Students from the Primary and Junior High Schools Complex in Brzeznica are interested in Science, mainly Physics. They attend many additional lessons and educational projects connected with Mathematics, Physics, Astronomy, amateur radio communications and satellite communications. They participate in educational trips and tours. Teachers prepare lessons for students interested in astronomy. The school organizes additional activities with the support of the European Union, such as special classes involving astronomical sky observation.

Moreover, the school prepared a series of activities related to astronautics: amateur radio communications with the ISS, astronomy classes and observation of the passing Space Station, art competitions related to the cosmos and the space station, activities for senior students concerning the life of astronauts aboard the space station.

Upcoming ARISS Contact Schedule

+ Rakuyo Technical High School, Kyoto, Japan, direct via 8N3LR
  Contact is a go for: Thu 2013-12-12 08:44:10 UTC

+ Tochigi Science Lion Project, Utsunomiya, Japan, direct via 8N1ISS
  Contact is a go for: Sat 2013-12-14 07:07:42 UTC

The episode of Ice Pilots (Ice Pilots NWT Season 5, Episode 1, (Cold Start)), which begins with an ARISS contact, can be viewed at http://www.youtube.com/watch?v=BuY0IJDhnwY

[ANS thanks ARISS, Charlie AJ9N and David AA4KN for the above information]

Satellite Shorts From All Over

+ AO-73 is now be active on oscar.dcarr.org.
  (Source David KD5QGR)

+ FUNCube-1 / AO-73 Radio Communications Subsystem
  • 145.935 MHz BPSK Telemetry 30 or 300 mW
  • Inverting SSB/CW transponder 300 mW PEP
    - 435.150 – 435.130 MHz Uplink LSB
    - 145.950 – 145.970 MHz Downlink USB
  Source AMSAT-UK

+ Live Video Streaming from the ISS

  The N2YO satellite tracking website provides live video streaming from the International Space Station (ISS) alongside a track showing the position of the ISS over the Earth.

  The Ustream video from the station is available only when the complex is in contact with the ground through its high-speed communications antenna and NASA's Tracking and Data Relay Satellite System. During "loss of signal" periods, you will see a blue screen. Since the station orbits the Earth once every 90 minutes, it sees a sunrise or a sunset every 45 minutes. When the station is in darkness, external camera video may appear black, but also may provide spectacular views of city lights below.

  Live streaming from the ISS http://www.n2yo.com/space-station/
  (Source AMSAT-UK)

+ December Issue of SatMagazine is now online
  http://www.satmagazine.com/download.php
  (Source SatMagazine.com)

+ Radio Astronomy Magazine Available Online

  The Vol 1 Issue 2, Dec 2013 issue of RAGazine is now available

  The publication by the British Astronomical Association Radio Astronomy Group (BAA-RAG) can be downloaded in both hi-res and lo-res versions.

  Lo-res 4 MB
  http://tinyurl.com/ANS342-LowResRAGazine

  Hi-res 9 MB
  http://tinyurl.com/ANS342-HiResRAGazine

  Issue 1 is on the BAA-RAG site at
  http://www.britastro.org/radio/downloads.html

  Join the BAA-RAG Yahoo Group at
  http://groups.yahoo.com/group/baa-rag
  (Source Southgate ARN)

+ MCubed-2 heard, telemetry captured

MCubed-2 is in orbit and working! Packets captured as the command team turned on beacons.
http://exploration.engin.umich.edu/blog/?page_id=1830
http://exploration.engin.umich.edu/blog/?page_id=1933
(Source N8MH and DK3WN)

+ While representing AMSAT at the Tampa Hamfest in Plant City, Florida, 7 Dec 2013, Drew Glasbrenner KO4MA, was able to complete a QSO via FO-29 with Patrick Stoddard WD9EWK, who was representing AMSAT at the Superstition ARC Hamfest in Queen Creek, Arizona.
(Source Drew KO4MA)

+ European Radio Amateurs' Organization Winter Newsletter now 0nline.
http://eurobureauqsl.org/newsletter/
Newsletter comes out quarterly, either in pdf format and as a website.
(Source EuroBureauQSL)

+ December is YOTA Month

After the success of the Youngsters On The Air events in the summer we decided that it’s time to do some more action !
During the whole month of December several country’s will become active with YOTA as suffix for callsign.
The idea for this is to break the ice for some youngsters and take the microphone in the hand. As seen over the years the YOTA-group is growing fast and every week more youngsters are asking to participate.
Let us all make YOTA populair in HAM radio and let us all help to put youngsters on the HAM radio train!
You want to hear us on the air? Listen for Youngsters On The Air callsigns in the whole month of December!
For more information

http://www.ham-yota.eu
(Source ham-yota.eu)

/EX

In addition to regular membership, AMSAT offers membership in the President's Club. Members of the President's Club, as sustaining donors to AMSAT Project Funds, will be eligible to receive additional benefits. Application forms are available from the AMSAT Office.

Primary and secondary school students are eligible for membership at one-half the standard yearly rate. Post-secondary school students enrolled in at least half time status shall be eligible for the student rate for a maximum of 6 post-secondary years in this status. Contact Martha at the AMSAT Office for additional student membership information.

73,
This week's ANS Editor,
EMike McCardel, KC8YLD
kc8yld at amsat dot org